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INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 0000053769		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/07992	International filing date (day/month/year) 22.07.2003	Priority date (day/month/year) 22.07.2002	
International Patent Classification (IPC) or both national classification and IPC A01N43/80			
Applicant BASF AKTIENGESELLSCHAFT et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the opinion II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input checked="" type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 			
Date of submission of the demand 19.12.2003		Date of completion of this report 08.11.2004	
Name and mailing address of the International preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Fort, M Telephone No. +31 70 340-4123 	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 03/07992**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-28 as originally filed

Claims, Numbers

1-30 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
 - ☐ the language of publication of the international application (under Rule 48.3(b)).
 - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority in written form.
 - ☐ furnished subsequently to this Authority in computer readable form.
 - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:
- ☐ the description, pages:
 - ☐ the claims, Nos.:
 - ☐ the drawings, sheets:
5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

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IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees, the applicant has:

☐ restricted the claims.

☒ paid additional fees.

☐ paid additional fees under protest.

☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

☐ complied with.

☒ not complied with for the following reasons:

see separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

☒ all parts.

☐ the parts relating to claims Nos. .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-30
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-30
Industrial applicability (IA)	Yes: Claims	1-30
	No: Claims	

2. Citations and explanations

see separate sheet

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP 03/07992

Re Item IV

Lack of unity of invention

This International Examining Authority considers the subject-matter of claims 1-30 to consist of multiple inventions as defined hereafter:

1. Claims: 1-9 (partially), 10-12, 21-22, 25-30 (partially)

A synergistic herbicidal mixture comprising at least one
3-heterocyclyl-substituted benzoyl derivative of the formula
(I), nicosulfuron and an acetolactate synthase inhibitor

2. Claims: 1-9 (partially), 13-15, 23-30 (partially)

A synergistic herbicidal mixture comprising at least one
3-heterocyclyl-substituted benzoyl derivative of the formula
(I), nicosulfuron and a lipid biosynthesis inhibitor

3. Claims: 1-9 (partially), 16-20, 25-30 (partially)

A synergistic herbicidal mixture comprising at least one
3-heterocyclyl-substituted benzoyl derivative of the formula
(I), nicosulfuron and a photosynthesis inhibitor

The common technical feature linking the 3 inventions listed above is that they all deal with synergistic herbicidal mixtures comprising a 3-heterocyclyl-substituted benzoyl derivative of the formula I, Nicosulfuron and a further herbicide or mixture of herbicides. This feature linking together the 3 inventions is known since synergistic herbicidal compositions comprising a compound of formula (I), Nicosulfuron and Dicamba have been prepared in D1 (D1= WO 99/65314) (see D1, table 76). Therefore this feature is not a special technical feature in the sense of Rule 13(2) PCT. Since no other technical feature common to the three inventions listed above can be distinguished, which would possibly fulfil this requirement, there is no single inventive concept underlying the three inventions and the present application lacks the required unity of invention prescribed by Article 34 3a) PCT.

Since 2 supplementary examination fees were paid, the 3 inventions identified above were the subject of international preliminary examination in establishing this report.

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**INTERNATIONAL PRELIMINARY
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Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following document:

D1: WO 99/65314

Invention n°1:

D1 discloses synergistic herbicidal compositions comprising a compound of formula (I) and nicosulfuron (see D1, tables 21-22). D1 also discloses synergistic herbicidal compositions comprising a compound of formula (I) and other acetolactatsynthase inhibitors such as Imazaquin, Imazamethabenz, Imazethapyr, Pyriithiobac-sodium and Halosulfuron-methyl as well as the possibility of using tertiary mixtures to further increase the herbicidal activity of a mixture of (I) with nicosulfuron.

The claimed compositions comprising (I), nicosulfuron and an acetolactate synthase inhibitor (claims 1-12, 21-22 and 25-30) are novel vis-à-vis D1 (Article 33(2) PCT) since said prior art does not disclose the tertiary mixture according to independent claim (I) but only the binary mixture of (I) with nicosulfuron or the tertiary mixture of (I) with dicamba and nicosulfuron.

Given the teaching of D1, the problem underlying the present invention may be seen as that of improving the activity of compositions comprising a compound of formula (I) (A) and nicosulfuron (B).

In view of the teaching of D1 and more particularly of the synergistic herbicidal activity demonstrated with several combinations of a compound of formula (I) with an acetolactatsynthase inhibitor, it would have been obvious to try out with a reasonable expectation of success mixtures containing as additional compound (C), an acetolactatsynthase inhibitor.

Thus the subject-matter of claims 1-12, 21-22 and 25-30 cannot be considered as being inventive (Article 33(3) PCT).

The subject-matter of claims 1-12, 21-22 and 25-30 is considered to be industrially applicable and the present application is therefore considered to satisfy the criterion set forth in Article 33(4) PCT.

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Invention N°2:

D1 discloses synergistic herbicidal compositions comprising a compound of formula (I) and nicosulfuron (see D1, tables 21-22). D1 also discloses synergistic herbicidal compositions comprising a compound of formula (I) and a lipid biosynthesis inhibitor such as dimethamid, S-metalochlor or acetochlor (see D1, tables 46-51, 83-84).

The claimed compositions comprising (I), nicosulfuron and a lipid biosynthesis inhibitor (claims 1-9, 13-15 and 23-30) are novel vis-à-vis D1 (Article 33(2) PCT) since said prior art does not disclose the tertiary mixture according to independent claim (I) but only the binary mixture of (I) with nicosulfuron or the tertiary mixture of (I) with dicamba and nicosulfuron.

Given the teaching of D1, the problem underlying the present invention may be seen as that of improving the activity of the known binary compositions comprising a compound of formula (I) and nicosulfuron. Since a synergistic effect has been demonstrated with compositions containing (I) and nicosulfuron or (I) together with a lipid biosynthesis inhibitor, it was obvious to try out with a reasonable expectation of success a tertiary mixture containing (I) together with nicosulfuron and a lipid biosynthesis inhibitor. The subject-matter of claims 1-9, 13-15 and 23-30 cannot therefore be considered as being inventive (Article 33 (3) PCT).

The subject-matter of claims 1-9, 13-15 and 23-30 is considered to be industrially applicable and the present application is therefore considered to satisfy the criterion set forth in Article 33(4) PCT.

Invention n°3:

D1 discloses synergistic herbicidal compositions comprising a compound of formula (I) and nicosulfuron (see D1, tables 21-22). D1 also discloses synergistic herbicidal compositions comprising a compound of formula (I) and a photosynthesis inhibitor such as pyridate, bentazon, paraquat-di-chlorid, diuron, isoproturon, bromoxynil, chloridazon, atrazin, metribuzin (see D1, tables 58-70).

The claimed compositions comprising (I), nicosulfuron and a photosynthesis inhibitor (claims 1-9, 16-20 and 25-30) are novel vis-à-vis D1 (Article 33(2) PCT) since said prior art does not disclose the tertiary mixture according to independent claim (I) but only the binary mixture of (I) with nicosulfuron or the tertiary mixture of (I) with dicamba and nicosulfuron.

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Given the teaching of D1, the problem underlying the present invention may be seen as that of improving the activity of known binary compositions comprising a compound of formula (I) and nicosulfuron. Since a synergistic effect has been demonstrated with compositions containing (I) and nicosulfuron or (I) together with a photosynthesis inhibitor, it was obvious to try out with a reasonable expectation of success tertiary mixtures containing (I) together with nicosulfuron and a photosynthesis inhibitor. The ~~subject-matter of claims 1-9, 16-20 and 25-30 cannot therefore be considered as being~~ inventive (Article 33(3) PCT).

The subject-matter of claims 1-9, 16-20 and 25-30 is considered to be industrially applicable and the present application is therefore considered to satisfy the criterion set forth in Article 33(4) PCT.

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